

### **3.5.3 SPECIFIC STANDARDS FOR PLAN OF SURVEY**

#### **3.5.3.1 PLAN SIZE**

The full-size final mylar and paper copies of the survey plan shall be either 30 inches by 42 inches or 24 inches by 36 inches, as provided by the New Jersey Map Filing Law. Prior to submittal to the Using Agency, all paper copies of the survey plan shall be folded to a size of approximately 8-1/2 inches by 11 inches, with the Standard Title Block facing up. Unfolded paper copies of the survey plan are not acceptable. The full-size reproducible mylar of the survey plan shall be rolled and submitted without any creases. The reduced survey plan attached to each metes and bounds description shall be no smaller than 8 \_ inches by 11 inches from cut edge to cut edge and include all of the image of the original survey plan, including border lines. If it becomes necessary to produce a booklet type plan of the area surveyed, the first sheet or cover sheet of any such booklet must be an index to show alignment with the remaining sheets of the survey. Each sheet must contain the required elements of the survey such as title block, north arrow, signature and seal, Legend of Acquisition, etc.

#### **3.5.3.2 ORIENTATION**

Survey information and the graphic depiction of the parcel on the plan shall be drawn so that north points generally upward or to the left when viewing the plan in a landscape view, or generally upward or to the right when viewing the plan in a portrait view.

#### **3.5.3.3 CLOCKWISE BEARINGS**

Bearings shall be drawn on the map so that the corresponding metes and bounds description of the parcel will read in a clockwise fashion. Bearings may have to be indicated in both forward and reverse directions on the plan of survey, with a small arrow to show the direction that the bearing runs, to provide both quadrants when needed for the description.

#### **3.5.3.4 SCALE**

Clarity of information will determine the actual scale of the plan. Standard engineering scales in feet in increments of 10 feet between 10 feet and 100 feet increments of 100 feet between 100 feet and 500 feet are required, unless an alternate scale is requested in the site-specific RFP or by the Using Agency. A bar scale of the overall plan shall be drawn on the plan. An enlargement detail may be drawn to an alternate scale from the overall plan but a detail drawn to show encroachment or marker dimensions relative to the survey line is not required to be drawn to scale. Enlargement details are recommended in many instances to show relationships of calculated corners to evidence found.

#### **3.5.3.5 LINE AND CURVE TABLES**

Line and Curve Tables are confusing and difficult for laypersons to use and understand. For this reason, Line and Curve Tables are not acceptable alternatives to labeling line and curve data directly on the drawn lines, unless specifically authorized by the Using Agency.

#### **3.5.3.6 SIGNIFICANT FIGURES**

Bearings shall be rounded to whole seconds of arc. Distances in US Survey Feet for survey courses shall be rounded to two decimal places. NJSPCS Coordinate Values in US Survey Feet shall be rounded to two decimal places. Areas of closed survey polygons shall be stated in acres and rounded to three decimal places. Square footage shall be rounded to the whole square foot but is only to be provided if the calculated area is less than 50 square feet or the survey is in an area of extremely high property values. If the latter, provide square feet and acres for area.

#### **3.5.3.7 MATHEMATICAL CLOSURE**

All property surveys must form closed polygons with all sides defined by mathematical survey expressions being bearings and distances on all straight line segments and tie lines: radius, arc length, delta, chord bearing and chord distance on all curved lines. General calls along roads or waterways are unacceptable without a tie line and are only permitted for existing deed calls or if

specifically required in a site-specific engagement specified by the Using Agency. Tie lines are to be provided along waterways, and riparian claim lines.

#### **3.5.3.8 MATHEMATICAL SURVEY EXPRESSIONS**

The New Jersey Licensed Land Surveyor is responsible for defining all courses of the parcel being surveyed by mathematical survey expressions. All straight-line courses will be defined by bearings and distances with angular units stated in degrees, minutes and whole seconds of arc. Curves will be defined by radius, arc length, chord bearing and chord length, and the horizontal distances, radii of curves or lengths of arc must be stated in US Survey Feet to two decimal places.

#### **3.5.3.9 AREA**

The areas calculated in association with the parcel land survey shall be stated in acres and rounded to three decimal places unless the parcel is bounded, all or in part, by a waterway or a Tidelands Claim of the State of New Jersey. In such cases, the area shall be given to one decimal place (0.1 acre). If the entire parcel is less than one (1) acre, the area shall be stated in square feet as well as acres. If the surveyed area is less than 50 square feet, then the area is to be stated in square feet only and rounded to the nearest square foot. If the survey is in an area of extremely high property values, provide both square feet and acreage. Consult the Using Agency for guidance in any site-specific engagement.

#### **3.5.3.10 AERIAL PHOTOGRAPHS AND PLANIMETRIC MAPPING**

Aerial photographs or planimetric maps or manuscripts, when used to locate physical features upon the survey plan, will be georeferenced to NJSPCS NAD 83, planimetrically depicted in conformance with National Map Accuracy Standards, and be current to within two (2) years of the date of the survey plan, unless this time restriction is waived or modified by the Using Agency. If Digital Aerial Orthophotography is obtained from NJDEP, this requirement is modified to allow the most recent photography available, even if older than two years, provided that the features must be field verified. An Aerial Information block shall be placed on the plan whenever aerial data has been used.

### **SEE ATTACHMENT 10 – AERIAL PHOTO INFORMATION BLOCK**

#### **3.5.3.11 AREAS OF CLAIM OF TIDELANDS OWNERSHIP BY STATE OF NEW JERSEY**

The New Jersey Licensed Land Surveyor is responsible for obtaining the official state maps showing riparian claims of the State of New Jersey and reproducing these claim lines on the survey plan. The area of the New Jersey claim is to be stated in acres to one-tenth acre (0.1 acre). The sources to be used will be maps entitled “Lands Subject To Investigation for Areas Now Or Formerly Below Mean High Water”, which have been filed in the office of the county recorder or clerk. Contact the Land Use Regulation Program for further information.

#### **3.5.3.12 WATERWAYS**

The New Jersey Licensed Land Surveyor is responsible for providing mathematical tie lines for survey courses that follow a meandering water line by a general call. If the survey follows a Mean High or Low Water Line, the surveyor must state on the plan the date and time of that the survey data had been collected. Be advised that the terms “trash-line” and “debris line” are neither appropriate nor acceptable survey terms. The tie lines may be eliminated from the plan when the water line is physically surveyed and defined by bearings and straight line distances that are indicated on the plan. Do not provide a line table. It is also not advisable to calculate curves along waterways.

#### **3.5.3.13 ROADS**

The New Jersey Licensed Land Surveyor is responsible for preparing a survey and corresponding metes and bounds description, which cannot in any way be construed as modifying the apparent intention of the parties. Road rights-of-way and the principles of dedication of land for road purposes shall not be taken lightly by the surveyor. The lines of

surveys prepared for the acquisition of land are to run with the lines of the deed description as written in the record, unless the site-specific engagement request directs some other course of action. If the fee title extends to the center of a public road, the survey lines should run to the center of the public road. The survey must also provide the bearings and distances of the right-of-way sidelines, as well as the area of the public right-of-way. The area in the right-of-way is subject to the paramount rights of the public and possible private rights and the area shall be stated as a separate item on both the plan and in the description. If there has been no dedication to define the sidelines of the right-of-way, the area of the right-of-way is defined as the area of the paved or traveled portion of the road bed.

Private roads crossing the parcel being surveyed must also be shown. The survey must indicate recording information for maps, deed book number and page number, or other pertinent information regarding the dedication of public ways or private easements.

#### **3.5.3.14 SUBDIVISION OF LANDS**

The State of New Jersey and, as an extension thereof, any state Using Agencies are exempted from municipal subdivision ordinances. Other entities, such as municipal, county, or non-profit groups operating under the Green Acres Program or county agricultural programs that may be using this Scope of Work for Professional Surveying Services, may not be exempted, and municipal subdivision laws would apply and supersede these provisions. The interest to be acquired in an entire lot is known as an Entire Taking in Fee or E/T Fee and the interest to be acquired in a portion of a tax lot is known as a Partial Taking in Fee or P/T Fee. This subsection applies to Partial Takings in Fee.

A subdivision, known as partial taking, shall be effectuated by surveying and describing the entire property and tax lots of the seller, then excepting out, by a metes and bounds description of the exception, all lands to remain to the seller. Monuments shall be set on corners of new lines, and line markers shall be set on new lines that are 500 feet or longer. Monuments set for corners shall be called for in the exception description. Severance lines shall project to the limits of the deed and may extend into public road rights-of-way. For this reason, any site-specific engagement RFP that specifies an exact acreage to remain with the seller shall be presumed to be exclusive of any fee interest in an adjoining public right-of-way included in the exception area.

The bearings and distances of the dividing line must be shown on the plan. The plan shall not be labeled to suggest that any lots will be consolidated or lot lines will be removed or to suggest proposed lot numbering, which shall remain a function of the municipal government in which the parcel is located. The integrity of the original lot shall be maintained by using terms such as "Part of Lot \_\_", "Area to be Acquired", and "Area of Exception to Remain". This terminology shall be clearly labeled on the plan. The plan shall include the area tabulation on the graphic portion of the plan and in the Area Summary of the Legend of Acquisition, including the percentage of each portion of lot being acquired rounded to two decimal places. This requirement may be modified by the Using Agency in a site-specific engagement RFP.

#### **3.5.3.15 TITLE BLOCK**

The New Jersey Licensed Land Surveyor is responsible for providing a standard title block as required by rules of the State Board of Professional Engineers and Land Surveyors. In addition to the elements required by the State Board of Professional Engineers and Land Surveyors, all title blocks shall include the telephone number of the firm and an email address. Information included in the title block does waive presenting information also required in the Legend of Acquisition.

#### **3.5.3.16 LEGEND OF ACQUISITION**

In addition to the surveyor's standard title block, all plans shall contain a Legend of Acquisition that provides the project number, funding source, Project Name, acquisition partner, seller name and

ID#, municipality, county, list of each tax block and lot surveyed, interest being obtained for each lot, an area summary, etc.

## **SEE ATTACHMENT 11- LEGEND OF ACQUISITION BLOCKS**

### **3.5.3.17 CORNER MARKING**

All corner marking shall be made in accordance with "Corner Marking and Line Marking" as set forth in "General Land Survey Requirements and Acquisition Concepts". Detailed enlargements made to show a corner marker set or the relationships between any markers found and the actual calculated survey corner shall include all information shown on the full-scale plan. It is not necessary to indicate witness lath in the detail.

### **3.5.3.18 PLAN CERTIFICATION**

The New Jersey Licensed Land Surveyor shall provide standard certifications that shall appear on the plan of survey. The first portion of the certification is to the seller, purchaser, and purchaser's title insurance company. The second portion of the certification is to satisfy the requirements of the Map Filing Law.

"I HEREBY CERTIFY TO (state name of seller) AND TO PURCHASER, State of New Jersey (as appropriate, state all acquisition partner names as specified by the Using Agency) AND ON BEHALF OF PURCHASER, TO PURCHASER'S TITLE INSURER THAT THIS PLAN, SURVEY AND A CORRESPONDING METES AND BOUNDS DESCRIPTION HAVE BEEN PREPARED UNDER MY IMMEDIATE SUPERVISION IN ACCORDANCE WITH A WRITTEN CONTRACT WITH (state name of Using Agency); THAT THIS PLAN IS A CORRECT AND ACCURATE REPRESENTATION OF CONDITIONS EXISTING AS OF (month and year of field work), SUBJECT TO SUCH NOTES AS MAY APPEAR HEREON."

"I hereby certify that to the best of my knowledge and belief that this map and land survey dated \_\_\_\_\_ meets the minimum survey detail requirements, with outbound corners marked, as promulgated by the State Board of Professional Engineers and Land Surveyors and has been made under my supervision, and complies with the provisions of THE MAP FILING LAW and that the outbound corner markers as shown have been found, or set."

"I do further certify that the monuments as designated and shown hereon have been set.

\_\_\_\_\_  
Signature and seal of NJ Licensed Land Surveyor

\_\_\_\_\_  
Date

Additional certification blocks required under the New Jersey Map Filing Law may be eliminated from plans prepared for state Using Agencies except for municipal certification as follows:

I, the Municipal Clerk of \_\_\_\_\_, do hereby certify that this plan is not the subject of any planning or zoning board reviews or approvals."

\_\_\_\_\_  
Signature of Municipal Clerk

\_\_\_\_\_  
Date

The surveyor shall obtain the signature of the Municipal Clerk upon notification by the Using Agency that the property has been acquired, and within 30 days of the actual acquisition shall present two mylar copies of the approved drawing, signed and sealed by the surveyor, to the County Clerk's office for recording on behalf of the Using Agency.

### **3.5.3.19 LOCATION MAP**

A location map shall be provided in the upper right hand corner of the plan. The perimeter of survey shall be drawn on the location map and an arrow shall indicate the site. A portion of a USGS Quadrangle

(1 inch equals 2000 feet, 1:24,000 scale) is preferred. State the name of the quad and provide the scale and graphic north arrow.

#### **3.5.3.20 LINE WEIGHT AND TYPE**

The New Jersey Licensed Land Surveyor is responsible for presenting all of the findings on the final survey plan in a clear, concise manner. The perimeter survey lines shall be the most prominent line weight of the main drawing. Solid lines are preferred.

#### **3.5.3.21 MISCELLANEOUS ITEMS ON PLAN**

In addition to all the State Board of Professional Engineers and Land Surveyors requirements and those previous requirements specified above, the surveyor must show the following items:

**3.5.3.21.1 Street address** of the subject parcel being surveyed only if the municipality has assigned a common street number;

**3.5.3.21.2 Tax Block and Lot number** of the parcel being surveyed, and those of adjoining;  
Note: If the survey findings indicate that the tax map is erroneous, so state. If a lot is not shown on the map, the lot shall be designated on the survey plan with the correct block number from the tax map and shall be identified as having NO LOT NUMBER ASSIGNED.

**3.5.3.21.3 Any permanent type buildings**, paved or concrete improvements, structures or foundations must be shown. In particular, residences must be identified and labeled in coordination with the Using Agency.

**3.5.3.21.4 Any utility easements**, visible or known of record, overhead wires or pole lines within the parcel being surveyed must be identified and shown on the plan of survey. If such easements are within the lines of a dedicated public road right-of-way, they may be omitted.

**3.5.3.21.5 Encroachments** shall be clearly drawn, labeled and dimensioned to the property line. A detailed enlargement of any encroachment may be necessary to clearly show sheds, buildings, decks, or other structures or areas of adverse use such as stone parking areas or areas of mowed lawn. Encroachments must be brought to the attention of the Using Agency prior to finalizing the plan of survey and metes and bounds description of property, as the interest in the area may be reduced to leave the area of encroachment with the seller.

**3.5.3.21.6 Watercourses**, including the name and showing the direction of flow and area contained within the bed must be drawn and labeled on the plan. In particular, water bodies located on the boundary of the property must be shown in a hatched pattern on the plan, and the area calculated and stated on the plan.

**3.5.3.21.7 Show all drains and sewers** that are visible on the surface of and within the limits of the parcel. Drains and sewers within a dedicated public road right-of-way need not be shown.

**3.5.3.21.8 Provide the name of record owners** and the latest deed book and page reference for adjoining lands to indicate that those records had been examined in the survey process and that there are no areas of confusion in the record, except for those that may be shown on the plan, if any.

**3.5.3.21.9 Roads not open** are to be so indicated. Paper streets that have not been vacated are subject to possible public and or private rights, and the area contained by them must be indicated on the plan.

**3.5.3.21.10 If the survey indicates that the municipal tax map erroneously** locates the parcel, this discrepancy should be noted on the plan.

**3.5.3.21.11 The deed book and page number** of the reference deeds actually used must be indicated in the graphic portion of the plan to which they apply. This information shall not be excluded or limited in appearance through the use of notes, except that the surveyor may limit his search of records to the obvious and reasonable (after consultation with the Using Agency), and may produce a plan noting that the work is subject to the findings of an accurate and up-to-date title search by a competent title company. This note shall not appear if the title report has been supplied to the New Jersey Licensed Land Surveyor by the Using Agency prior to delivery of the final plans.

**3.5.3.21.12 Point of Beginning** The point of beginning used in the metes and bounds description must be clearly labeled "Description Point of Beginning" or "P.O.B." or similar notation, and must be tied into a corner of record or road intersection. The NJSPCS NAD 1983 Northing and Easting coordinate values stated in US Survey Feet to two decimal places must be labeled on the plan and stated in the description. The surveyor must set a monument at the point of beginning for each parcel, unless this requirement is waived or modified by the Using Agency at the time that the bids for a site-specific engagement are solicited.